

# MedPalyn 2017

## **Mediterranean Palynology Symposium 2017**

Barcelona, 4-6 September 2017

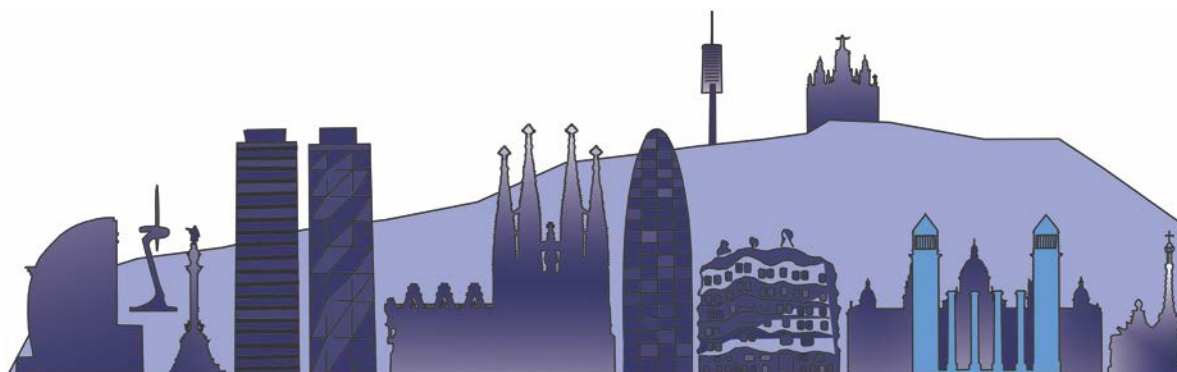
Asociación de Palinólogos de Lengua Española (APLE)

Gruppo di Palinologia e Paleobotanica della Società Botanica Italiana (GPPSBI)

Association des Palynologues de Langue Française (APLF)

## Abstracts book

Edited by Concepción De Linares and Jordina Belmonte



Title: Mediterranean Palynology Symposium 2017. Abstracts Book

Editors: Concepción De Linares and Jordina Belmonte

© Author's texts

Print: © La Imprenta Comunicación Gráfica S.L. [www.laimprentacg.com](http://www.laimprentacg.com)

ISBN: 978-84-945378-7-5 (Book)

ISBN: 978-84-945378-8-2 (e-Book)

Available in

<http://lap.uab.cat/aerobiologia/es/bibliography#organizedcongresses>

Suggestion for citation:

Entire volume:

De Linares C. & Belmonte J. (Eds.). 2017. Mediterranean Palynology Symposium 2017. Abstracts Book. Barcelona, Spain. ISBN 978-84-945378-8-2.

A contribution:

Pacini E. 2017. Pollen developmental arrest and ecophysiological consequences. In: De Linares C. & Belmonte J. (Eds.). 2017. Mediterranean Palynology Symposium 2017. Abstracts Book. Barcelona, Spain. pp. 30. ISBN 978-84-945378-8-2.

## Preliminary study of the airborne pollen in the atmosphere of Puerto Ayora (Galapagos Islands, Ecuador)

Picornell A.<sup>1</sup>, Trigo M.M.<sup>1</sup>, Recio M.<sup>1</sup>, Tapia A.<sup>2</sup>, Jaramillo P.<sup>2</sup>

<sup>1</sup>Department of Plant Biology, Faculty of Sciences, University of Malaga, 29010-Malaga, Spain;

<sup>2</sup>Charles Darwin Foundation, Puerto Ayora, Galapagos, Ecuador

[picornell@uma.es](mailto:picornell@uma.es)

Galapagos is an archipelago of volcanic islands located 972 km west from the continental Ecuador. They were declared by the UNESCO as a World Heritage Site and Biosphere Reserve due to their singular environmental value, where a third part of the native plants are endemic to this archipelago (Jaramillo *et al.*, 2011). In spite of the numerous scientific studies carried out in Galapagos, there are not any aerobiological samplings being performed currently. The main objectives of this study were to install a pollen trap for detecting the presence of pollen in the atmosphere of Puerto Ayora (Santa Cruz, Galapagos Islands) and qualitatively identify the different pollen types detected during the studied period.

A Durham (1946) gravimetric pollen trap was modified to turn it into a passive impact pollen trap based on Pla Dalmau (1957) modifications. It was placed on the roof of the Galapagos National School (Puerto Ayora, Santa Cruz Island) at a height of 15m above ground level. The samples were obtained by using silicone fluid as adhesive substance and glycerine gelatine as mounting mean. The pollen grains were counted in a surface of 14 x 48 mm in each sample. The pollen types were identified with the aid of the pollen guide of the Galapagos Island by Jaramillo & Trigo (2011) and the Charles Darwin Foundation pollen bank.

Pollen types of endemic plants such as *Darwiniothamnus* sp., *Passiflora foetida* var. *galapagensis* Killip, *Justicia galapagana* Lindau and *Castela galapageia* Hook. f. were detected together with those of other native and introduced species.

A high diversity of pollen types was detected, reflecting the particular vegetation of the island. This preliminary aerobiological information can be used as precedent for further studies on the pollination of native and introduced species of the Galapagos Islands, as well as for detecting possible allergic diseases in the population.

### References

- Durham O.C. 1946. A proposed standard method gravity sampling, counting and volumetric interpolation of results. *J. Allergy* 17: 79-86.
- Jaramillo P. et al. 2011. CDF Checklist of the Galapagos Flowering Plants. Charles Darwin Foundation, Puerto Ayora, Santa Cruz. Islas Galápagos.
- Jaramillo P. et al. 2011. Guía rápida de polen de las Islas Galápagos. Charles Darwin Foundation, Puerto Ayora, Santa Cruz. Islas Galápagos.
- Pla Dalmau J. M. 1957. Estudios palinológicos y precisiones morfológicas sobre los granos de polen de quinientas especies botánicas del extremo noreste de España. Tesis Doctoral. Barcelona.

*Project supported by a grant provided by the University of Malaga and the Andalusian Agency for International Cooperation and Development (UMA-AACID).*

## Preliminary study of the atmospheric pollen in Ronda (south Spain)

Picornell A., Recio M., Trigo M.M., Cabezudo B.

Department of Plant Biology, Faculty of Sciences, University of Malaga, 29071-Malaga, Spain.

[picornell@uma.es](mailto:picornell@uma.es)

Since 1991, the aerobiology research team of the University of Malaga has been sampling and studying the atmospheric pollen content in different localities of Malaga province (SW Spain) (Recio *et al.* 1998, 2006). Nevertheless, the northwest part of the province had not been studied yet. In order to complete this missing information, a pollen trap was installed in Ronda in December 2016. This locality, the biggest city in the northwest of Malaga province, is located in a rural area close to the natural Parks Sierra de las Nieves and Sierra de Grazalema, surrounded by crops, natural and semi-natural vegetation. The objectives of this preliminary study were to determinate the atmospheric pollen behaviour of the main taxa registered during winter and spring months in Ronda, as well as compare them with the data obtained by Malaga city sampling station during the same period in order to search for significant differences.

The samplings were made by means of two Hirst-type volumetric pollen traps (Hirst 1952). One of them was placed on the roof of the Perez de Guzman High School (Ronda) and the other was located on the roof of the Faculty of Sciences building (Malaga). Samples obtained were mounted and counted according to the methodology proposed by the Spanish Aerobiology Network, the REA (Galán *et al.* 2007).

Significant differences ( $\alpha = 0.05$ ) between Ronda and Malaga were found regarding the daily concentration of pollen. These differences were particularly detected for some pollen types such as *Mercurialis*, *Fraxinus*, Urticaceae and Cupressaceae. In general, we found higher pollen concentration levels in Ronda. We can see a delay for some taxa in Ronda.

The higher concentrations of pollen detected in Ronda can be justified by the abundant surrounding vegetation. The differences in concentration and seasonal behaviour detected for some taxa can be explained by the different thermotype and ombrotype of the two sampling sites and the natural distribution and abundance of these taxa in the province.

### References

- Galán C. *et al.* 2007. *Spanish Aerobiology Network (REA). Management and Quality Manual*. Servicio de Publicaciones Universidad de Córdoba.
- Hirst J.M. 1952. An automatic volumetric spore-trap. *Ann. Appl. Biol.* 39: 257-265.
- Recio M. *et al.* 1998. Pollen calendar of Malaga (Southern Spain), 1991-1995. *Aerobiologia* 14: 101-107.
- Recio M. *et al.* 2006. A three-year aeropalynological study in Estepona (Southern Spain). *Ann. Agric. Environ. Med.* 13: 201-207.